CLAIMS

We claim:

1.   A method implemented in a client computer for remotely debugging an application program over the Internet, comprising:

(a)   establishing a connection between a client computer and a server computer over the Internet;

(b)   receiving a request from a debug program of said server computer;

(c)   causing an application program of said client computer to generate a response to said request; and

(d)   transmitting an indication of said response back to said debug program; and

(e)   repeating (b), (c) and (d) multiple times so as to run said application program through a diagnostic sequence.

2.   The method according to claim 1, wherein said diagnostic sequence is provided to said debug program by a user of said server computer.

3.   The method according to claim 1, wherein said diagnostic sequence is preprogrammed into said debug program.

4.   The method according to claim 3, further comprising detecting a debug request initiated by a user of said client computer prior to (a).

5. The method according to claim 4, further comprising transmitting identifications of said application program and said client computer to said server computer, after (a).

6. The method according to claim 4, further comprising transmitting a user identification and a password provided by a user of said client computer to said server computer, after (a).

7. The method according to claim 3, wherein the running of said preprogrammed diagnostic sequence is paused by a user of said server computer and control of said debug program is transferred to said user of said server computer, and further comprising:

(f) receiving a request initiated by said user of said server computer;

(g) causing said application program to respond to said request;

(h) generating a graphics file including pixel information for a graphics image displayed on a display screen of said client computer; and

(i) transmitting said graphics file to said server computer so that said graphics image is displayed on a display screen of said server computer.

8. The method according to claim 7, further comprising repeating (f) through (i) multiple times so as to allow said user of said server computer to remotely debug said application program.

9.   An apparatus for remotely debugging an application program over the Internet, comprising a client computer including an interface program for:

(a)   establishing a connection between a client computer and a server computer over the Internet;

(b)   receiving a request from a debug program of said server computer;

(c)   causing an application program of said client computer to generate a response to said request; and

(d)   transmitting an indication of said response back to said debug program; and

(e)   repeating (b), (c) and (d) multiple times so as to run said application program through a diagnostic sequence.

10.   The apparatus according to claim 9, wherein said diagnostic sequence is provided to said debug program by a user of said server computer.

11.   The apparatus according to claim 9, wherein said diagnostic sequence is preprogrammed into said debug program.

12.   The apparatus according to claim 11, wherein the running of said preprogrammed diagnostic sequence is paused by a user of said server computer and control of said debug program is transferred to said user of said server computer, and said interface program is further for, after (e):

(f)   receiving a request initiated by said user of said server computer;

(g)   causing said application program to respond to said request;

(h)   generating a graphics file including pixel information for a graphics image displayed on a display screen of said client computer; and

(i)   transmitting said graphics file to said server computer so that said graphics image is displayed on a display screen of said server computer.

13.   The apparatus according to claim 12, wherein said program is further for repeating (f) through (i) multiple times so as to allow said user of said server computer to remotely debug said application program.

14.   A method implemented in a client computer for remotely debugging an application program over the Internet, comprising:

(a)   establishing a connection between a client computer and a server computer over the Internet;

(b)   receiving a request from a debug program of said server computer;

(c)   causing an application program of said client computer to respond to said request;

(d)   generating a graphics file including pixel information for a graphics image displayed on a display screen of said client computer; and

(e)   transmitting said graphics file to said server computer so that said graphics image is displayable on a display screen of said server computer.

15. The method according to claim 14, wherein said graphics file is in a GIF, JPEG or TIF graphics file format.

16. The method according to claim 14, further comprising detecting a debug request initiated by a user of said client computer, prior to (a).

17. The method according to claim 14, further comprising repeating (b) through (e) multiple times so as to allow a user of said server computer to remotely debug said application program.

18. The method according to claim 14, further comprising transmitting identifications of said application program and said client computer to said server computer, after (a).

19. The method according to claim 14, further comprising transmitting a user identification and a password provided by a user of said client computer to said server computer, after (a).

20. An apparatus for remotely debugging an application program over the Internet, comprising a client computer including an interface program for:

(a) establishing a connection between a client computer and a server computer over the Internet;

(b) receiving a request from a debug program of said server computer;

(c) causing an application program of said client computer to respond to said request;

(d) generating a graphics file including pixel information for a graphics image displayed on a display screen of said client computer; and

(e) transmitting said graphics file to said server computer so that said graphics image is displayed on a display screen of said server computer.

21. The apparatus according to claim 20, wherein said program is further for detecting a debug request initiated by a user of said client computer, prior to (a).

22. A method implemented in a server computer for remotely debugging an application program over the Internet, comprising:

(a) receiving a request from a client computer over the Internet to debug an application program of said client computer;

(b) transmitting back to said client computer a request for said application program to take an action;

(c) receiving an indication of a response of said application program action back from said client computer; and

(d) repeating (b) and (c) multiple times so as to run said application program through a diagnostic sequence.

23. The method according to claim 22, wherein said diagnostic sequence is provided to a debug program of a server computer by a user of said server computer.

24. The method according to claim 22, wherein said diagnostic sequence is preprogrammed into a debug program of a server computer.

25. The method according to claim 22, further comprising, prior to (b):

(a1) receiving an identification of said application program from said client computer; and

(a2) checking said application program identification against an application program identification list to confirm that a contractual obligation exists to debug said application program.

26. The method according to claim 22, further comprising, prior to (b):
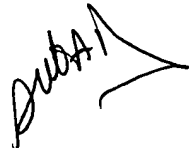
(a3) receiving an identification of said client computer from said client computer; and

(a4) confirming that said client computer is authorized to run said application program by comparing said client computer identification against an authorized client computer identification.

27. The method according to claim 24, wherein the running of said preprogrammed diagnostic sequence is paused by a user of said server computer and control of said debug program is transferred to said user of said server computer, and further comprising:

(e) transmitting to said client computer a request for said application program to take an action;

(f) receiving a graphics file including pixel information for a graphics image displayed on a display screen of said client computer in response to said action;

(g)   displaying said graphics image on a display screen of said server computer; and

(h)   repeating (e) through (g) multiple times so as to allow said user of said server computer to interactively debug said application program by transmitting requests for said application program to take certain actions in consideration of graphics images defined in graphics files received from said client computer in response to prior such requests.

28.   An apparatus for remotely debugging an application program over the Internet, comprising a server computer including a debug program for:

(a)   receiving a request from a client computer over the Internet to debug an application program of said client computer;

(b)   transmitting back to said client computer a request for said application program to take an action;

(c)   receiving an indication of a response of said application program action back from said client computer; and

(d)   repeating (b) and (c) multiple times so as to run said application program through a diagnostic sequence.

29.   The apparatus according to claim 28, wherein said diagnostic sequence is provided to a debug program of a server computer by a user of said server computer.

30.   The apparatus according to claim 28, wherein said diagnostic sequence is preprogrammed into a debug program of a server computer.

31. The apparatus according to claim 30, wherein the running of said preprogrammed diagnostic sequence is paused by a user of said server computer and control of said debug program is transferred to said user of said server computer, and further comprising:

(e) transmitting to said client computer a request for said application program to take an action;

(f) receiving a graphics file including pixel information for a graphics image displayed on a display screen of said client computer in response to said action;

(g) displaying said graphics image on a display screen of said server computer; and

(h) repeating (e) through (g) multiple times so as to allow said user of said server computer to interactively debug said application program by transmitting requests for said application program to take certain actions in consideration of graphics images defined in graphics files received from said client computer in response to prior such requests.

32. A method implemented in a server computer for remotely debugging an application program over the Internet, comprising:

(a) receiving a request from a client computer over the Internet to debug an application program of said client computer;

(b) transmitting back to said client computer a request for said application program to take an action;

(c) receiving a graphics file including pixel information for a graphics image displayed on a display screen of said client computer in response to said action;

(d) displaying said graphics image on a display screen of a server computer; and

(e) repeating (b) through (d) multiple times so as to allow a user of said server computer to interactively debug said application program by transmitting requests for said application program to take certain actions in consideration of graphics images defined in graphics files received from said client computer in response to prior such requests.

33. The method according to claim 32, wherein said graphics file is in a GIF, JPEG or TIF graphics file format.

34. The method according to claim 32, further comprising, prior to (b):

(a1) receiving an identification of said application program from said client computer; and

(a2) checking said application program identification against an application program identification list to confirm that a contractual obligation exists to debug said application program.

35. The method according to claim 34, further comprising, prior to (b):

(a3) receiving an identification of said client computer from said client computer; and

(a4) confirming that said client computer is authorized to run said application program by comparing said client computer identification against an authorized client computer identification.

36. The method according to claim 32, further comprising, prior to (b):

(a5) receiving a user identification and user password from said client computer; and

(a6) verifying that said user identification and said user password are valid.

37. An apparatus for remotely debugging an application program over the Internet, comprising a server computer including a debug program for:

(a) receiving a request from a client computer over the Internet to debug an application program of said client computer;

(b) transmitting back to said client computer a request for said application program to take an action;

(c) receiving a graphics file including pixel information for a graphics image displayed on a display screen of said client computer in response to said action;

(d) displaying said graphics image on a display screen of a server computer; and

(e) repeating (b) through (d) multiple times so as to allow a user of said server computer to interactively debug said application program by transmitting requests for said application program to take certain actions in consideration of graphics images defined in graphics files received from said client computer in response to prior such requests.